



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,838	04/02/2001	Hyun-doo Shin	Q59546	8476

7590

03/24/2006

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20037-3213

EXAMINER

LE, BRIAN Q

ART UNIT	PAPER NUMBER
----------	--------------

2624

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,838

Applicant(s)

SHIN ET AL.

Examiner

Brian Q. Le

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment and Arguments

1. Applicant's amendment filed March 03, 2006, has been entered and made of record.
2. Applicant's arguments with regard to claims 1, 3-5 and 9-11 have been fully considered, but are not considered persuasive because of the following reasons:

Regarding claim 1, the Applicant argues (page 3 of Remarks) that Watanabe Reference does teach the increasing/raising threshold voltage level for a quantization pattern and not for denoising since the Applicant claimed that the threshold value recited in the claim relates to the threshold value used for denoising. The Examiner respectfully disagrees. The claimed limitation "increasing a threshold value if a pattern quantizing value is retained and denoising the decomposed data" does not indicate to one skilled in the art that the threshold value is used only for denoising. The Examiner respectfully proposed a change of this limitation to "increasing a denoising/denoised threshold value if a pattern quantizing value is retained, and denoising the decomposed data" would clearly described the Applicant's discussion. Thus, broadest reasonable interpretations can be used to reject this limitation until proper amendment being made. Second, the Applicant argues (also page 3 of Remarks) that Watanabe does not disclose the determining whether a pattern quantizing value is retained. The Examiner hereby elaborates Watanabe's teaching further by point out column 1, lines 45-67; FIG. 2A, FIG. 2B and FIG. 8 wherein Watanabe clear teaches the obtaining (retain) of quantized pattern which also is the obtaining (retaining) of quantized value (FIG. 2A, FIG. 2B and FIG. 8).

Thus, the rejections of all of the claims are maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakagawa U.S. Patent No. 5,291,282 and Katsuyama U.S. Patent No. 6,771,813, further in view of Watanabe et al. U.S. Patent No. 3,688,266.

Regarding to claim 1, Nakagawa teaches a method of describing pattern repetitiveness of an image (FIG. 6) comprising the steps of:

(b) decomposing the projected image down own level (divide the image into blocks) (column 7, lines 1-5);

(c) increasing a threshold value until a pattern quantizing value is retained (column 11, lines 59-68 and column 30, lines 59-68), and denoising the decomposed data (amplification and noise removal) (column 33, lines 1-10); and

(d) describing pattern repetitiveness of the image using the pattern quantizing value of the denoised data and the threshold value used for denoising (column 33, lines 1-15).

Nakagawa does not explicitly teaches the concept of projecting an image on a predetermined axis having a predetermined direction and does not teach the increasing a threshold value if a pattern quantizing value is retained. Katsuyama further teaches a pattern image processing (column 3, lines 35-38) wherein projecting an image on a predetermined axis (x-axis and y-axis) having a predetermined direction (FIG. 13 a, FIG. 17 and column 5, lines 40). Modifying Nakagawa's

Art Unit: 2623

method of describing pattern repetitiveness of an image according to Katsuyama would be able to apply the axis and direction to further describe the pattern/similarity of the image, thus the ability to outline the pattern (column 5, lines 38-44). This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Nakagawa according to Katsuyama. Watanabe also teaches a pattern recognition process comprises a step of increasing a threshold value (increase voltage threshold value) if a pattern quantizing value is retained (the obtaining/retaining of quantized pattern which also is the obtaining/retaining of quantized value as shown by FIG. 2A; FIG. 2B and FIG. 8) (column 1, lines 45-67; FIG. 2A; FIG. 2B and FIG. 8). Thus, also modifying Nakagawa's method of describing pattern repetitiveness of an image according to Watanabe would be able to operate threshold at different level to further distinguish pattern (whether between letter or blank spaces) (column 1, lines 47-50). This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Nakagawa according to Katsuyama and Watanabe.

Regarding to claim 3, please refer back to claim 1 for the teachings. In addition, Nakagawa teaches the method comprises the steps of calculating the pattern quantizing value of the image (column 11, lines 59-67); calculating the pattern quantizing value of the denoised data (column 12, lines 7-28) and discriminating whether a current pattern quantizing value is identical (the process of determine whether the quantization width fall within a range) to a previous pattern quantizing value (column 8, lines 25-67).

Regarding claim 4, please refer back to claim 1 for the teachings and explanations.

For claims 5 and 9-11, please refer back to claim 1 for further explanation.

Art Unit: 2623

5. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Nakagawa U.S. Patent No. 5,291,282, Katsuyama U.S. Patent No. 6,771,813, Watanabe et al. U.S. Patent No. 3,688,266 as applied to claim 1 above, and further in view of Acharya U.S. Patent No. 6,574,374.

Regarding claim 2, as discussed in claim 1, Nakagawa teaches the concept of decomposition. However, Nakagawa does not disclose the concept of decomposition is based on a discrete wavelet transform. Acharya teaches the system removing noises/artifacts (abstract) wherein the decomposition is based on a discrete wavelet transform (column 4, lines 1-10) to further remove the artifacts from the image. Modifying Nakagawa's method of describing pattern repetitiveness according to Nakagawa would be able to further remove the noise and artifacts from the images. This would improve processing and therefore, it would have been obvious to one of ordinary skill in the art to modify Nakagawa according to Acharya.

For claim 6, please refer back to claim 2 for the explanation.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2623

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL
March 16, 2006

JINGGE WU
PRIMARY EXAMINER

